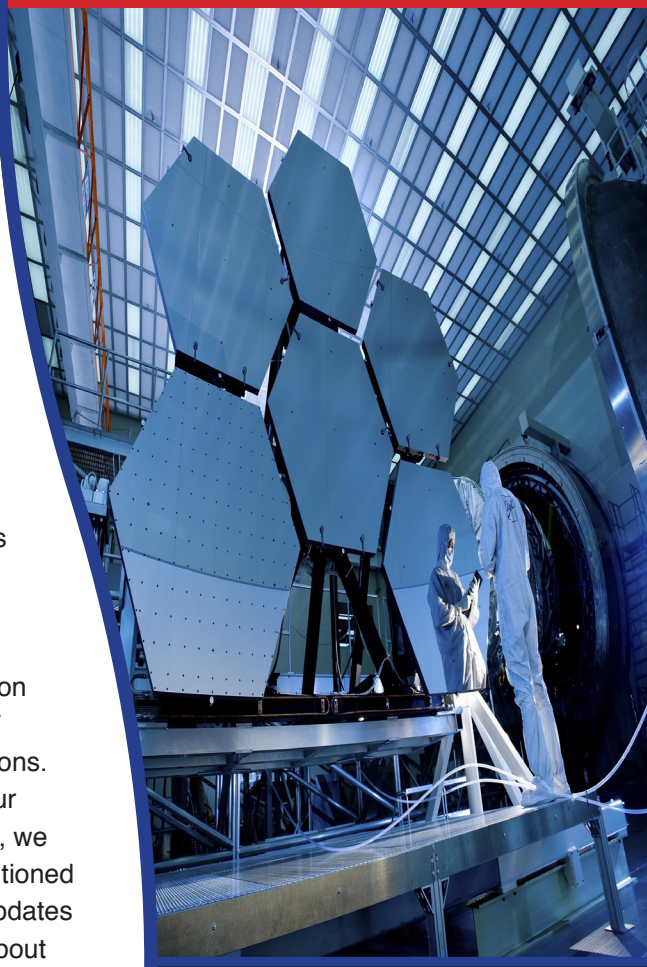
National Aeronautics and Space Administration

The Concept

Small **B**usiness **I**nnovation **R**esearch
Small Business **T**echnology **TR**ansfer

Vision | Innovation
Infusion | Collaboration
Commercialization

Volume 3, Number 2 | Spring 2012



Executive Corner

Last fall, I joined the SBIR/STTR Program as the new Program Executive, with big shoes to fill as Carl Ray moved on to new challenges and new opportunities here at NASA. It is an exciting time to be part of the SBIR/STTR program at NASA, as the Agency moves forward with a new suite of technology programs under the auspices of the Office of the Chief Technologist, and as the SBIR/STTR Program takes steps toward implementing new initiatives enabled by the recently passed reauthorization for the program.

Over the next few years it is my hope to increase NASA's participation in the SBIR/STTR program by creating more opportunities for SBIR/STTR technologies to find their way into NASA applications or missions. Further, I hope to initiate new practices at NASA that will increase our level of commercialization support to our performers. And of course, we will be looking to implement new initiatives enabled by the aforementioned reauthorization. From time-to-time I will use this space to provide updates about our thinking about implementing the program, to inform you about upcoming events, and to solicit feedback from you on questions we might have about how to make the program more effective for you.

Sincerely,

Richard Leshner
Program Executive
NASA SBIR/STTR

FEATURE CONTENT

** This is an interactive document. Mouse over links and images for further details.*

Opportunity to Present SBIR Technologies at ISS Conference

The SBIR Technologies Workshop at the International Space Station (ISS) Research and Development Conference will give companies holding current NASA SBIR contracts the opportunity to present their technologies to prime companies, industry, and Government. Priority will go to technologies that can show a direct relationship to ISS needs. Space is limited so reserve your spot early.

The 1st Annual ISS Research and Development Conference, including the SBIR Technologies Workshop, will be held on June 26-28 in Denver, Colorado. Features of the conference include:

- Plenary sessions that will highlight major results band pathways to future opportunities.
- Overviews of upcoming opportunities from organizations managing and funding research on ISS, including NASA programs and the ISS National Laboratory.
- Parallel technical sessions for scientists to be updated on significant accomplishments to date.
- Implementation workshop that is designed to help new users take this information and develop their own ideas for experiments using this unique laboratory.
- SBIR Technologies Workshop.

This is the only conference offering perspectives on the full breadth of research and technology development.

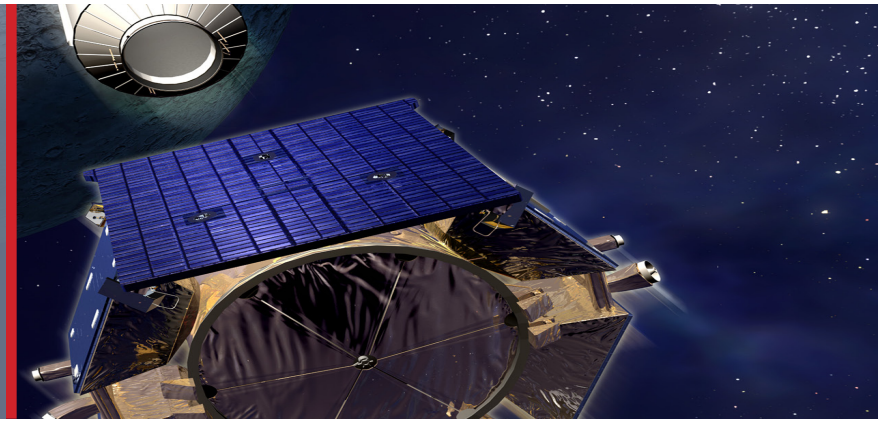
Workshop Abstract Deadline:
Tuesday, April 17, 2012

Workshop Abstract submittal:
www.surveymonkey.com/s/SBIR_ISSworkshop

Register for the Conference and Workshop at:
www.astronautical.org

Feature Highlight

Infusing and Commercializing Your Technology



SBIR companies too often face the "valley of death," in which a firm receives funding for basic research but is not able to cross over to applied research and applications. Post-Phase II transition programs can help bridge this gap. However, you must have a realistic, well thought out, clearly defined business plan and mechanism for proceeding beyond Phase II. Your specific strategies will depend upon whether your technology is applicable to government programs/products (infusion), to the private sector (commercialization) or both.

- A broad customer/product base is essential for long-term company success.
- Assess prospective applications and confirm sponsors' needs and interests via direct communication and contacts.
- NASA technology needs are more likely to be met if they can be engineered to overlap significantly with commercial or Department of Defense (DoD) needs. This also allows leverage of private sector funds (e. g. IR&D, angel investments, venture capital, other private capital, or teaming with a larger organization) and/or targeted transition programs (Click agency listed here for more details: DoD, Air Force, Navy, Army)

However, if a NASA need is truly unique, often the only option is for NASA to fund post-Phase II. Potential sources include:

- NASA's Phase II-E option: can provide up to $150K ($250K starting with 2011 Phase II's) of additional SBIR funds, if your company provides at least equal cost sharing.
- Phase III SBIR contracts: non-SBIR funds, but do not require an additional competition; SBIR Data Rights also apply.
- Competed government sources: a wide variety of NRA's, BAA's, and RFP's.
- Government programs/projects: many prefer to fund companies directly.
- A wide selection of excellent business development resources and contacts are available at the annual SBIR National Conferences (click HERE), the annual SBIR Beyond Phase II Conference, and regional SBIR Conferences.

SBIR 2.0

The SBA Office of Technology's revamped SBIR website can be found at www.sbir.gov. Among other enhancements, the new site features a comprehensive awards and solicitations database, a robust site search engine, user-friendly design, and useful new content. The site is geared toward helping guide small businesses that are part of or may become part of the SBIR program.

The Create the Future Design Contest was launched in 2002 by the publishers of NASA Tech Briefs magazine to help stimulate and reward engineering innovation. The annual event has attracted more than 8,000 product design ideas from engineers, entrepreneurs, and students worldwide. The contest begins March 1, 2012 and ends June 30, 2012 and the Grand Prize winner will receive $20,000.

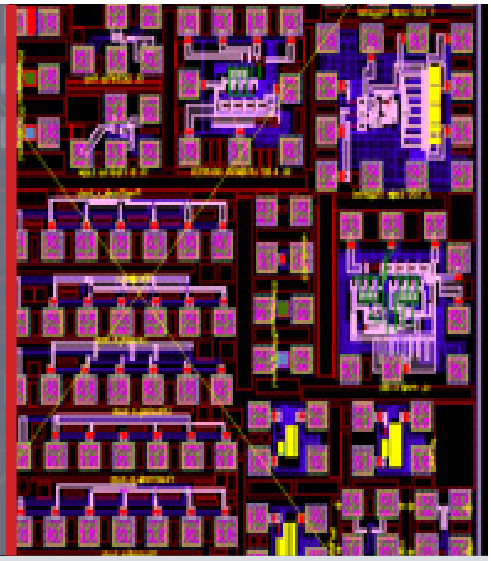
Broadband Photonics

Through SBIR ARRA funding, Broadband Photonics Inc., successfully developed a truly distributed hydrogen sensor prototype with one optical signal processing unit and two continuous pieces of hydrogen sensing fiber with about 100 feet long. The performance of the hydrogen sensing fiber developed in this project is at least an order of magnitude better than all previously reported and existing sensing fibers. With the funding, the company was able to carry out two State-of-Art sensing material fabrication processes: atomic layer deposition and sputtering deposition. Over 25 fabrication processes have been conducted. Quality and compositions of about 100 sensing fiber samples were analyzed with various electronic microscopes. Broadband Photonics developed three generations of the hydrogen sensing fibers. The third generation sensing fiber has superior performance at least one order of magnitude better than previously reported and existing sensing fibers in terms of hydrogen sensitivity and response.

The highly-sensitive and fast fiber optic hydrogen sensor developed with the ARRA funding can meet the needs of operational safety and maintenance of propellant quantities for in-space liquid hydrogen systems and on-earth vehicles and aircrafts powered by hydrogen.

http://www.broadbandphotonics.com/

CoolCad Electronics



CoolCAD Electronics LLC, received SBIR funding to develop methodologies, tools and circuits for Cost Effective design in extreme environments. This effort provided NASA with very cost effective methodologies and modeling tools to develop robust electronics for the extreme environment of outer space.

There are many other applications and beneficiaries to the project including the commercial satellite industry and the Department of Defense space applications programs. In addition, next generation computers or quantum computers are likely to be enabled with the aid of electronics operating at extremely low temperatures. Another application will be extremely low noise electronics, where extremely weak radio or optical signals can be extracted from the background by cooling down the electronics to cryogenic temperatures. Finally, the computer aided design (CAD) tool that had its origins with this ARRA sponsored program, is now being expanded upon to develop CAD capabilities for the next generation of power electronics which will increase energy efficiency, improve electric and hybrid vehicles and help in designing of smart grid technology, benefitting both the U.S public and private sectors.

http://www.coolcadelectronics.com/

Success Stories

* An important objective of the NASA SBIR/STTR Programs is to enable small businesses to achieve success in their endeavors. One method we use is to highlight successful projects in this newsletter, calling them “success stories. You can find more at our website: http://sbir.gsfc.nasa.gov/SBIR/success.htm. If you would like to submit your SBIR/STTR technology for consideration into our success stories gateway, please email: arc-sbir-outreach@nasa.gov.

Mark Your Calendar

Apr 10-11 – *Understanding Government Contract Cost Accounting (Pomona, CA)*

Apr 12 – *Government Contract Cost and Pricing Development (Pomona, CA)*

Apr 30-May 3 – *Federal Laboratory Consortium National Conference (Pittsburg, PA)*

Jun 4-6 – *Navy Opportunity Forum (Crystal City, VA)*

Jun 18-21 – *TechConnect World Summit & Innovation Showcase (Santa Clara, CA)*

Jun 26-28 – *1st Annual ISS Research and Development Conference (Denver, CO) *more details on page 2*

Jul 24-26 – *SBIR & Global Trade Summit (Uncasville, CT)*

Sept 10-13 – *Beyond Phase II Conference (Indianapolis, IN)*

Nov 13-15 – *National SBIR Fall Conference (Portland, OR)*

Please send general comments and questions to:
ARC-SBIR-Outreach@mail.nasa.gov

http://sbir.gsfc.nasa.gov/SBIR/newsletter.html

NASA SBIR/STTR
NASA's SBIR/STTR website provides details on the programs, solicitations, resources, and more.

NASA SBIR Program Contacts
Program Management and center points of contact can be reached via email or phone to answer any questions you may have.

NASA SBIR Success Story Gateway
Web site enabling small businesses to achieve success in their endeavors by highlighting successful projects.

TechSource
Information on current and recently completed SBIR/STTR Phase II projects. Facilitates the transition of resulting technologies into further development, investment, and utilization for NASA.

Hallmarks & Success Videos
A collection of short videos about successful companies that have participated in the SBIR and STTR programs.

Tech Briefs
Featuring exclusive reports of innovations developed by NASA and its industry partners, contractors that can be applied to develop new improved products and solve engineering or manufacturing problems.

Technology Innovation
Providing information about NASA's technology needs and opportunities, as well as interesting facts and feature articles about our successes.

Spinoff
Providing NASA's premier annual publication of successful commercial and industrial applications of NASA sponsored technology.

Office of the Chief Technologist
OCT is responsible for developing and executing innovative technology partnerships, technology transfer and commercial activities and the development of collaboration models for NASA.